



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/707,970	01/29/2004	John Lovell	20.2836	1969

23718 7590 11/10/2005

SCHLUMBERGER OILFIELD SERVICES
200 GILLINGHAM LANE
MD 200-9
SUGAR LAND, TX 77478

EXAMINER

COY, NICOLE A

ART UNIT	PAPER NUMBER
----------	--------------

3672

DATE MAILED: 11/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/707,970

Applicant(s)

LOVELL ET AL.

Examiner

Nicole Coy

Art Unit

3672

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-46 is/are pending in the application.
- 4a) Of the above claim(s) 37-43 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-46 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-46 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ 11/3/05, 8/17/05, 5/2/05, 7/7/04,
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-36 and 44-46 drawn to a product, classified in class 175, subclass 40.
 - II. Claims 37-43 drawn to a method, classified in class 340, subclass 853.1.

Inventions I and II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case, the process for using the product can be practiced with another materially different product, such as a gap collar without insulation between the first and second connectors.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation with Jeannie Salazar on October 31, 2005 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-36 and 44-46. Affirmation of this election must be made by applicant in replying to this Office action. Claims 37-43 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Objections

2. Claim 7 is objected to because of the following informalities: There is no antecedent basis for "the bearing". Appropriate correction is required.
3. Claims 15 and 25 are objected to because of the following informalities: There is a 'T' missing from the word 'the' in line 1. Appropriate correction is required.
4. Claims 28-36 are objected to because of the following informalities: The word 'insulatinve' is misspelled. Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

Art Unit: 3672

only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-4, 6, 7, 10, 12-18, 21-24, 28-30, and 44-46 are rejected under 35 U.S.C. 102(e) as being anticipated by Peter (USP 6,926,098).

With respect to claim 1, Peter discloses a gap collar for an electromagnetic communication unit of a downhole tool positioned in a wellbore, the downhole tool communicating with a surface unit via an electromagnetic field generated by the electromagnetic communication unit (see column 1 lines 7-11), the gap collar comprising: a first collar having a first end connector (see figure 3 numeral 34); a second collar having a second end connector matingly connectable to the first end connector (see figure 3 numeral 36); a non-conductive insulation coating disposed on one of the first end connector, the second end connector and combinations thereof, the insulation coating adapted to electrically insulate the first and second end connectors (see column 4 lines 53-56); and a non-conductive insulation molding positioned about one of an inner surface of the collars, an outer surface of the collars and combinations thereof, the insulation moldingly conforming to the shape thereof (see column 3 lines 28-33, wherein the insulation inherently conforms to the shape thereof).

With respect to claim 2, Peter discloses a non-conductive protective molding positioned about the outer surface of the collars (see column 4 lines 53-56).

With respect to claim 3, Peter discloses that the protective coating is plastic (see column 4 lines 56-59).

With respect to claim 4, Peter discloses a wear band positioned about at least a portion of the protective coating (see figure 3 numeral 35 and lines 28-37).

Art Unit: 3672

With respect to claim 6, Peter discloses a metal ring positioned between a shoulder portion of the collars and in contact therewith (see column 4 lines 44-49 and figure 3).

With respect to claim 7, Peter discloses at least one cavity is present between the bearing and collars, the gap collar further comprising an epoxy positioned in the at least one cavity (see figure 3 and column 3 lines 28-33).

With respect to claim 10, Peter discloses a wear band positioned about the outer surface of at least a portion of at least one of the collars (see figure 3 numeral 35 and lines 33-37).

With respect to claim 12, Peter discloses that the connectors of the collars are mated threads (see figure 3 and column 4 lines 36-39).

With respect to claim 13, Peter discloses that the mated threads are standard threads (see column 2 lines 18-20).

With respect to claim 14, Peter discloses at least one of the mated threads is modified to receive the insulation coating (see column 4 lines 53-56).

With respect to claim 15, Peter discloses a downhole tool that is one of a drilling tool, a coiled tubing tool, a wireline tool, a slickline tool and combinations thereof (see column 2 lines 12-15, wherein Peter discloses a drill string).

With respect to claim 16, Peter discloses a downhole tool that is a drilling tool which is operatively connected to a drill string and has a passage therethrough and a mandrel therein (see figure 3 numeral 60), and wherein the collars are drill collars operatively connectable to the drill string (see figure 3).

With respect to claim 17, Peter discloses that the non-conductive insulation molding is positioned about one of the mandrel, the inner surface of the drill collars, the outer surface of the drill collars and combinations thereof (see column 3 lines 28-33).

With respect to claim 18, Peter discloses that the insulation coating is a ceramic (see column 4 lines 56-59).

With respect to claim 20, Peter discloses that the insulation molding forms a hydraulic seal (see column 3 lines 28-33, wherein a hydraulic seal would be inherently formed when the insulation was applied).

With respect to claim 21, Peter discloses that the collars with insulation coating therebetween define a capacitive element (see column 4 lines 45-49).

With respect to claim 22, Peter discloses a downhole electromagnetic telemetry unit for communication with a surface electromagnetic communication unit, the downhole electromagnetic telemetry unit disposed in a downhole tool positioned in a wellbore, the downhole electromagnetic telemetry unit comprising: a gap collar comprising a first conductive collar (see figure 3 numeral 34), a second conductive collar and a non-conductive insulation coating therebetween (see figure 3 numeral 36 and 32-36); electromagnetic circuitry operatively connected to each conductive collar whereby an electromagnetic field is generated and modulated (see figure 2 numeral 40); and a non-conductive insulation molding positioned about one of an inner surface of the collars, an outer surface of the collars and combinations thereof, the insulation moldingly conforming to the shape thereof (see column 3 lines 28-33).

With respect to claim 23, Peter discloses a first collar that has a first end connector and the second collar has a second end connector matingly connected to the first end connector (see figure 3 and column 4 lines 36-39).

With respect to claim 24, Peter discloses that the end connectors each have threads matingly connectable together (see figure 3 and column 4 lines 36-39).

With respect to claim 28, Peter discloses a method of generating an electromagnetic field from a downhole tool positioned in a wellbore, the downhole tool having electronic circuitry adapted to communicate with a surface unit via the electromagnetic field, the method comprising: providing the downhole tool with a gap collar to house the electromagnetic circuitry (see figure 2), the gap collar comprising a first and a second conductive collar matingly connected together with a non-conductive insulation coating therebetween to form a capacitive element (see figure 3, column 4 lines 32-36 and column 4 lines 45-49); moldingly conforming a non-conductive insulation molding about one of an inner surface of the collars, an outer surface of the collars and combinations thereof such that the insulative molding conforms to the shape thereof (see column 3 lines 28-33, wherein said insulation inherently conforms to the shape thereof); and applying the electromagnetic field across the gap collar (see column 1 lines 20-28).

With respect to claim 29, Peter discloses that the first and second conductive collars have mated connectors and wherein the non-conductive insulation coating is disposed on at least one of the mated connectors (see column 4 lines 32-36).

With respect to claim 30, Peter discloses that the mated connectors have mated threads (see column 4 lines 36-39).

With respect to claim 33, Peter discloses that the gap collar has a passage therethrough (see figure 3) and a mandrel therein (see figure 3 numeral 60), the step of moldingly conforming comprising moldingly conforming a non-conductive insulation molding about one of an inner surface of the collars, an outer surface of the collars, an outer surface of the mandrel and combinations thereof such that the insulative molding conforms to the shape thereof (see column 3 lines 28-33, wherein the insulation inherently conforms to the shape thereof).

With respect to claim 34, Peter discloses positioning a non-conductive protective coating on an outer surface of one of the collars, the insulation molding and combinations thereof (see column 3 lines 28-33).

With respect to claim 36, Peter discloses positioning a metal ring between a shoulder portion of the collars and in contact therewith (see figure 3 and column 4 lines 44-49).

With respect to claim 44, Peter discloses a gap collar for an electromagnetic communication unit of a downhole tool positioned in a wellbore, the downhole tool communicating with a surface unit via an electromagnetic field generated by the electromagnetic communication unit, the gap collar comprising: a first collar having a first threaded end connector (see figure 3 and column 4 lines 36-39); a second collar having a second threaded end connector matingly connectable to the first threaded end connector (see figure 3 and column 4 lines 36-39); a non-conductive insulation coating

Art Unit: 3672

disposed on one of the first threaded end connector, the second threaded end connector and combinations thereof, the insulation coating adapted to electrically insulate the first and second threaded end connectors (see column 4 lines 32-36); and a non-conductive insulation molding positioned about one of an inner surface of the collars, an outer surface of the collars and combinations thereof wherein one of the first threaded end connector (see column 3 lines 28-33), the second threaded end connector and combinations thereof are modified from a standard threaded end connector to receive the non-conductive insulation coating whereby the contact area between the threaded connectors is increased (see column 2 lines 18-20).

With respect to claim 45, Peter discloses that the insulation molding conforms to the shape thereof (see column 3 lines 28-33, wherein the insulation inherently conforms to the shape thereof).

With respect to claim 46, Peter discloses a metal ring positioned between a shoulder portion of the drill collars to establish contact therebetween (see figure 3 and column 4 lines 44-49).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 5, 11, 19, 31, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peter.

With respect to claims 5 and 11, Peter teaches a wear band, but is silent as to what material the wear band is. It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have made the wear band out of metal, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

With respect to claim 19, Peter is silent as to what material the insulation molding is made of. It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have made the insulation molding with rubber, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

With respect to claim 31, Peter is silent as to whether the connectors are modified. However, when the threads are connected it would have been obvious that the threads would have been modified from a standard dimension to a modified dimension.

With respect to claim 32, Peter is silent as to how the collars are secured together, but Peter does teach that there is an insulation coating therebetween. Torquing is a method well known in the art. It would have been obvious to one having ordinary skill in the art at the time of the invention to torque the collars together so as to

Art Unit: 3672

form a secure connection without breaking the non-conductive insulation coating therebetween.

9. Claims 8, 9 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peter in view of Logan et al. (USP 6,158,532).

With respect to claims 8 and 35, Peter does not teach a gap collar comprising a non-conductive sleeve positioned along an inner surface of the collars. Logan et al. teaches a non-conductive sleeve positioned along an inner surface of the collars to provide a wear resistant electrical insulation (see column 5 lines 5-7 and figure 3C). It would have been obvious at the time of the invention to modify Peter by including a non-conductive sleeve positioned along an inner surface of the collars as taught by Logan et al. in order to provide wear resistant electrical insulation.

With respect to claim 8, Peter in view of Logan et al. does not disclose what material the non-conductive sleeve is made of. It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have the inner sleeve of plastic, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

10. Claims 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peter in view of Wong.

Art Unit: 3672

With respect to claim 25, Peter is silent as to what the electromagnetic circuitry comprises. However, a electromagnetic circuitry comprising a process⁴ and a transceiver are well known in the art. See, for example, figure 5 of Wong.

With respect to claim 26, Peter is silent as to whether the downhole electromagnetic unit comprises a memory storage unit. However, memory storage units are well known in the art. See, for example, column 5 line 42 to column 6 lines 3.

With respect to claim 27, Peter is silent as to whether the downhole electromagnetic unit comprises a sensor adapted to measure downhole parameters. However, sensors adapted to measure downhole parameters are well known in the art. For example, see Wong figure 2A.

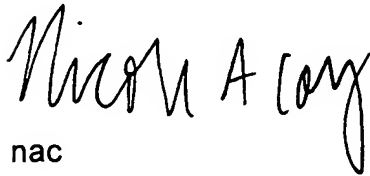
Conclusion


11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nicole Coy whose telephone number is 571-272-5405. The examiner can normally be reached on M-F 8:00-5:30, 1st F off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bagnell can be reached on 571-272-6999. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3672

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


nac


William N. Smith
Primary Examiner